



Making Worn Out Soil Produce 100 Bushels of Corn per Acre

CORN GROWN AFTER VETCH
 by Robert H. Moulton.
 An enterprising Indiana farmer followed advice given by the Department of Agriculture and planted sandy vetch on dead soil.

It is rather unpleasant to see that the world is being invited to face the cold, raw fact of a gradually increasing scarcity of the prime necessities of life. Agricultural figures just published in Rome by the International Institute of Agriculture show that the process of scrapping the most essential of all our foods, grain, goes on apace.

Steadily the arable land of the world shrinks as the area under permanent grass, often a euphemism for land that is derelict, extends its frontiers. At the present moment the United States is dependent on imported supplies for an appreciable amount of wheat and for different cereals consumed in this country.

There is not only a tremendous shortage of wheat in the United States today, but of corn also, as is testified by the price of \$1.20 per bushel paid in a number of instances recently for the latter grain. This is about three times as much as the farmer has received for it in normal times. Figures posted by the Chicago board of trade indicate that the visible supply of corn in this country today is less than half what it was a year ago. Of course, the war has had much to do with the depletion of our stores, and a consequent rise in price. But even granting that the demand has been phenomenal, the fact remains that our farmers are not producing as much corn as they should.

Evidently something is wrong with our system of growing corn. Most farmers understand the importance of good seed for planting, and the majority of them employ scientific methods of cultivation. The trouble, then, would appear to lie with the soil.

Everyone knows that, unintentionally perhaps, most farms in this country have been robbed of much fertility of the soil. In every state there are thousands of farms which formerly produced big crops but are now so worn out that the land will not return enough to pay for the labor of tilling it. Many a farmer says, as he gazes over his broad acres: "I remember when I was a boy that field was fine for corn, but now it's only fit for pasture." But if he only knew, that field is capable of producing just as much corn as it did in the old days; it is even probable that it could be made to break the records established in its earlier prime. This, at any rate, is what William C. Smith, an Indiana farmer, says, and Mr. Smith ought to know, for he has performed some seeming miracles with worn-out land down Indiana way.

Farm journals, agricultural colleges and the United States department of agriculture have been doing a wonderfully good work in telling the farmer how to increase the fertility of his soil, but Mr. Smith, apparently, has discovered the easiest, simplest and most inexpensive way of all. Almost anyone can tell how to spend a hundred dollars per acre on fertilizer, crushed limestone, etc., and in the end improve the land. But it takes a practical, successful farmer like Mr. Smith to demonstrate how a field "never known to have on it a crop of any value" could be made within one year to produce 72 bushels of corn per acre at a cost of \$3.50 per acre, aside from labor. The how and why of it all has been put into a book, "How to Grow 100 Bushels of Corn on Worn-Out Soil," which Mr. Smith has dedicated to the American farmer. And he believes that any other farmer who will follow his teachings will be equally successful. It all sounds like a fairy story, but Mr. Smith has facts to back up all his statements. Furthermore, he is known nationally for the remarkable experiments he has made.

In 1906, Mr. Smith purchased a farm that had the reputation of being one of the poorest in Indiana. It had been kicked and buffeted about as trading stock. Each owner no sooner got into possession of it when he found he had purchased a gold brick, and never rested until he succeeded in unloading it upon some other victim. It never seemed to occur to any of its owners that the farm had simply been handled by soil robbers and was paying the penalty by withdrawing its bounty. Mr. Smith purchased the farm because of its cheapness, location and possibilities, and was given the laugh for so doing.

The entire farm in its early history was covered with large walnut, poplar, oak and other timber, the timber on the sandy land having been as heavy as on the other portion of the farm. The land was a portion of an Indiana reserve, set apart by the government to the Indians in 1818 and by the Indians sold again in 1835, and was cleared more than 60 years ago, and for many years produced large crops. It had always been farmed upon the principle of getting out of it all you can each year and putting nothing back into the soil. Under this system of farming the soil had become so poor that in the best season it produced but 15 to 20 bushels of corn to the acre, while in bad seasons the crop was an entire failure.

Mr. Smith had read in one of the bulletins of the department of agriculture that the value of an acre of "Sandy Vetch" plowed under was equivalent to putting into the ground \$20 or \$40 worth of commercial fertilizer, and straightway decided to try it on his farm. Accordingly, he ordered tough seed to plant two acres.

The seed was planted in August, upon the



CORN CROP AFTER VETCH CROP



VETCH IN FULL BLOOM

poorest and most rolling two acres of sand land on the farm. It grew rapidly, and by winter the ground was so completely covered with its foliage that washing of the land was entirely prevented. An examination of the roots showed them set thick with nitrogen nodules. Early in the spring, before any other grass or vegetation began to grow, the vetch plants were pushing out their summer foliage, and by May 1 they were four feet in length. About the first of June the two acres were cut for hay.

Seeing that he had found a valuable plant for the farm, Mr. Smith planted 25 acres to vetch the next year, the sowing being done on the poorest and sandiest land of the farm. It was decided to seed 21 acres of this land to field corn and leave the other for pasture. The vetch grew luxuriantly.

The spring of 1908 was very wet, and it was May 1 before the ground was in condition to break for corn. Delays were such that the 21 acres reserved for corn were not entirely broken until May 25. The vetch had grown to a height of five feet, and the mass of vegetation was so heavy that it was almost impossible to turn under. A half dozen makes of plows were tried with complete failure, when finally success was obtained with a double disk plow, and the field was finished. The prospect did not look inviting, for bunches of vetch showed here and there sticking out of the ground. The field was worked down to fairly good condition for planting by dragging and rolling, and on June 3 and 4 was planted to yellow corn.

Dire were the predictions made as to the outcome. Many contended that the heavy mass of vegetation would absorb all the moisture from the ground and the corn would die. But Mr. Smith gritted his teeth, held his counsel and awaited results. The corn came up a splendid stand. Dry weather set in, which added no little discomfort to the situation. The corn grew slowly, and as soon as it was sufficiently large the cultivators were set to work, and were worked with a little difficulty on account of bunches of vetch insufficiently plowed under catching on the cultivator points.

The neighboring farmers came around, leaned over the fence, and indulged in sarcastic remarks. The gist of these remarks was that they had never in all their experience seen so unpromising a prospect for corn as this field presented.

The weather was dry, and the corn grew five or six inches, and made no further growth for more than a week. At the end of this time it seemed to take on new life, and grew with such rapidity that even Mr. Smith was astounded.

When the corn reached waist height the prophets who had predicted its early demise on account of the great mass of vetch turned under tried another tack: "Wait until it begins to ear," they said, "and you will see it fire and wither up." But the corn refused to side with these chronic croakers, and grew up and up until it reached the height of eight to ten feet, silked, tasselled, and bore its ears of golden corn.

It was subject to six weeks of dry weather after it had silked, and yet it had not fired and every hill was bright and green. Across the road a neighbor's corn fired clear above the ears of the corn, and did not make more than 20 bushels to the acre. But Mr. Smith's corn finally reached its harvesting stage, sound and solid. It was

gathered, hauled to market, and made by weight 72 bushels to the acre, and brought a money value of \$35 per acre.

The planter used to plant the corn was set to drop three grains to the hill, and never missed putting three grains in the hill, but too often dropped four grains, which made the corn too thick, and this condition reduced the yield fully ten bushels or more to the acre. But think of 72 bushels of corn being grown on land that had not for over 20 years produced more than 20 bushels to the acre, and this feat accomplished in so short a time and with so little expense, as the cost of the vetch seed was but \$3.50 an acre.

This experiment with vetch made Mr. Smith a vetch enthusiast. The following year he planted ten acres of better and higher land to vetch, and the yield of corn on this land after the vetch was over 90 bushels per acre, the cost of the vetch seed for this field being only \$3 per acre. Similar experiments were made with the growing of sweet corn and potatoes on land that had first been planted to vetch, and the results were equally successful.

Vetch, according to Mr. Smith, is no respecter of soils. It settles down and makes its home with the rich or poor clay as well as the rich or poor sand, and commences its business of soil restoration at once. It has no terrors of frost or drought. Winter will grasp it with its hand and hold it in its icy clasp for months and months, and when the warm sunshine of spring releases it, it smiles with its freshness of green and continues doing business at the old stand. The drought of fall, spring or summer will blow its breath upon it, but it heeds it not, and continues its business of storing fertility in the soil as though it were being constantly caressed with refreshing showers.

Big Elephant Butte Dam Will Curb the Rio Grande Floods

The United States reclamation service has completed by the building of the Elephant Butte dam a reservoir capable of impounding 862,200,000 gallons of water. That is to say, within an artificial lake 45 miles long and with a shore line of 216 miles, water enough will be stored to spread a foot deep over an area of 4,285 square miles; or, if twice that depth, it would cover the state of Delaware. The purpose of this water is to irrigate 185,000 acres in four valleys lying below the storage basin in New Mexico and Texas.

While the dam itself is not so high as others in the United States for a kindred service, still the massiveness of the structure and the capacity of the reservoir make the project not only the biggest thing of its kind in the United States but the most ambitious in the world. The famous Assuan dam in Egypt impounds only two-thirds as much water and cost \$14,000,000 more than the Elephant Butte structure, or \$19,000,000. Elephant Butte is in New Mexico, about twelve miles west of Engle, and in order to carry materials to the dam site it was necessary to build a branch railway nearly thirteen miles long tapping the Atchison, Topeka and Santa Fe line. The government constructed this road and operated something like a fourth of it, and in this way saved \$130,000 in freight charges alone.

The dam is built of great rocks buried in a mass of concrete and blocks a canyon on the Rio Grande. From the lowermost point of the parapet wall the dam rises 318 feet, and nearly a third of this is below the river bed. At its top the structure has a length of 1,674 feet and on it runs a fine roadway 16 feet wide. The dam is 225 feet thick at its base and the entire mass, which called for 610,000 cubic yards of material, represents a dead weight of 1,000,000 tons. This strength and inertia are needed to halt the onrush of the erratic and the torrential Rio Grande and to hold the accumulated waters so that they may be supplied slowly and safely to the widespread acres reaching for 171 miles.

Work was begun in 1911, and half of the succeeding six years was taken up in preliminary operations before the great bulwark could be reared. This preparatory work called for the construction of a great sluice to divert the river's flow and enormous bulkheads or subsidiary dams above and below the permanent dam.

The climate is an equable one in the region opened to the farmer, and the soil is abundantly productive when properly watered. A practical husbandman with \$5,000 working capital has a splendid chance.

URGES INCREASED CORN PRODUCTION

Secretary of Agriculture Makes Strong Appeal to Farmers of Ten Counties.

Can Be Grown Successfully Over Wider Area Than Any Other Cereal and Furnishes Nutritious Food for Man and Beast.

Washington.—The secretary of agriculture has issued the following statement:

Corn is America's most important cereal. It can be grown successfully over a wider area than any other, and furnishes nutritious food for man and draft animals. The production of corn should be increased this year to the fullest extent, taking into consideration seed, labor, and existing economic conditions, and the availability of good land in corn-growing regions not needed more urgently for other crops. The acreage may well be increased in most of the country east of the one hundredth meridian, as corn, in general, thrives in this region.

An appreciable increase in the corn crop is most feasible, however, in the sections of highest corn production. Favorable growing conditions exist in such regions; farmers there are familiar with corn growing; they have the necessary equipment available, and have adapted corn production to prevailing economic conditions.

Areas of Maximum Corn Production.

A list of the leading corn-producing counties in the principal corn-producing states marks roughly the area in which efforts to increase the production of corn should be most successful. Such a list of counties for the ten leading corn-producing states follows. The states and the counties within them are named in the order of their importance in corn production. Although early plantings have been completed or are in progress in some of the counties, late additional plantings may be advisable in such regions.

ILLINOIS—Counties: Champaign, Iroquois, LaSalle, Livingston, McLean, Bureau, Christian, Edgar, Henry, Lee, Logan, Macon, Sangamon, Shelby, Vermilion, Will, Adams, Coles, DeKalb, DeWitt, Douglas, Fayette, Ford, Fulton, Grundy, Hancock, Kanokake, Knox, McDonough, Macoupin, Mason, Mercer, Montgomery, Morgan, Ogle, Peoria, Piatt, Pike, Tazewell, Warren, Whiteside, Woodford, Madison, Marshall, Moultrie, Wayne, White, Greene, Jasper, Jefferson, Kane, McHenry, Marion, Stephenson, Carroll, Clark, Clay, Cook, Hamilton, Henderson, Kendall, Menard, Winnebago, Cass, Clinton, Crawford, Effingham, Franklin, Rock Island, St. Clair, Schuyler, Stark, Washington.

IOWA—Counties: Harrison, Plymouth, Pottawatomie, Sioux, Woodbury, Adair, Benton, Blackhawk, Boone, Buena Vista, Butler, Calhoun, Carroll, Cass, Cedar, Cherokee, Clinton, Crawford, Dallas, Franklin, Fremont, Greene, Grundy, Hancock, Hamilton, Hardin, Jasper, Johnson, Keokuk, Kosciusko, Linn, Lyon, Mahaska, Marshall, Mills, Monona, O'Brien, Page, Pocahontas, Polk, Poweshiek, Sac, Shelby, Story, Tama, Washington, Webster, Wright, Audubon, Buchanan, Cerro Gordo, Delaware, Fayette, Ida, Iowa, Johnson, Marion, Montgomery, Clay, Clayton, Floyd, Hancock, Henry, Jones, Scott, Taylor, Warren, Wayne.

NEBRASKA—Counties: Custer, Buffalo, Gage, Knox, Lancaster, Saunders, Antelope, Blaine, Boone, Butler, Cass, Colfax, Clay, Cumming, Dawson, Dixon, Fillmore, Frontier, Furnas, Hamilton, Holt, Jefferson, Johnson, Lincoln, Madison, Nuckolls, Osage, Pierce, Platte, Richardson, Seward, Thayer, Wayne, Webster, York, Adams, Burt, Dodge, Franklin, Phelps, Polk, Redwill, Valentine, Valley, Wessley, Hall, Harlan, Howard, Kearney, Nance, Nemaha, Pawnee, Sherman, Stanton.

MISSOURI—Counties: Bates, Nodaway, Vernon, Atchison, Audrain, Barton, Callaway, Carroll, Cass, Harrison, Henry, Jackson, Lafayette, Macon, Monroe, Phelps, Saline, Boone, Chariton, DeKalb, Holt, Ray, St. Clair, Andrew, Caldwell, Clinton, Dallas, DeWitt, Montgomery, Carroll, Jasper, Knox, Linn, Pike, Stoddard, Benton, Cedar, Dade, Lincoln, Livingston, Mississippi, Montgomery, New Madrid, Polk, Shelby, Sullivan, Adams, Buchanan, Clark, Clay, Franklin, Grundy, Lawrence, Lewis, Mercer, Newton, Ralls, Randolph, St. Louis, Scott, Warren.

INDIANA—Counties: Benton, Knox, Montgomery, Tippecanoe, Boone, Clinton, Madison, Shelby, White, Hamilton, Hendricks, Randolph, Rush, Warren, Allen, Carroll, Delaware, Fountain, Gibson, Grant, Henry, Jasper, Laporte, Newton, Posey, Sullivan, Spencer, Gibson, Cass, Daviess, Greene, Hancock, Howard, Johnson, Kosciusko, Marion, Miami, Morgan, Perry, Putnam, Tipton, Vigo, Adams, Decatur, Elkhart, Fulton, Huntington, Jackson, Lake, Marshall, Porter, Pulaski, St. Joseph, Spencer, Wabash, Wheeler, Warrick.

TEXAS—Counties: Collin, Fannin, Grayson, Lamar, Denton, Hunt, Navarro, Bell, Cooke, Hill, McLennan, Mills, Red River, Dallas, Falls, Hopkins, Limestone, Montague, Smith, Wise, Cass, Cherokee, Clay, Coryell, Ellis, Fayette, Garza, Johnson, Mason, Musk, Van Zandt, Wildberger, Williamson, Anderson, Bowie, Gaudalupe, Harrison, Henderson, Houston, Lavaca, Rockwall, Parker, Robertson, Washita, Wichita, Bastrop, Dewitt, Fort Bend, Freestone, Grimes, Panola, Shelby, Tarrant, Travis, Upshur, Wharton, Wheeler, Wood.

KANSAS—Counties: Butler, Jewell, Marshall, Nemaha, Reno, Republic, Sedgewick, Smith, Sumner, Washington, Barber, Brown, Clay, Cloud, Coffey, Cowley, Crawford, Decatur, Dickinson, Graham, Greenwood, Harper, Jackson, Jefferson, Kingman, Labette, Lyon, McPherson, Marion, Mitchell, Morris, Osage, Osborne, Phillips, Pottawatomie, Rice, Stafford, Bourbon, Cherokee, Franklin, Linn, Miami, Montgomery, Neosho, Shawnee, Wabaunsee, Allen, Anderson, Harvey, Norton, Pratt, Riley, Rooks, Saline, Wilson, Atchison, Doniphan, Douglas, Elk, Johnson, Ottawa, Sheridan, Barton, Chautauqua, Kiowa, Leavenworth, Lincoln.

OHIO—Counties: Darke, Wood, Madison, Pickaway, Clinton, Fayette, Franklin, Greene, Putnam, Ross, Butler, Champagn, Clark, Hancock, Henry, Highland, Mercer, Miami, Paulding, Preble, Van Wert, Auglaize, Fairfield, Hardin, Logan, Logan, Marion, Montgomery, Seneca, Shelby, Union, Warren, Adams, Allen, Brown, Clermont, Delaware, Fulton, Sandusky, Wyandot, Crawford, Dade, Harrison, Knox, Richland, Stark, Wayne, Williams, Adams, Belmont, Hamilton, Lawrence, Livingston, Marshall, Muhlenberg, Nelson, Pike, Todd, Trigg, Wayne, Webster, Whitley.

NEW STATE HOME FOR DEPENDENTS

NEARLY 100 ARE NOW READY FOR ADOPTION

BOARD LEASES MORE GROUND

Items of General Interest Gathered from Reliable Sources Around the State House

Western Newspaper Union News Service.

With the completion of the new home for dependent children in Lincoln, and the return to this institution of fifteen babies which have been boarded out, the state board of control announces that it has between ninety and 100 babies which may be adopted into good homes. The plan of boarding babies out will be abandoned.

Chairman Mayfield of the board of control says that among the babies ready for adoption are many kiddies that are really beautiful, and that all of them are healthy and well-behaved. Mr. Mayfield is paying personal attention to the home for dependent children, and asks all wishing a boy or girl, of any age from a few months up to 14 years, to come to Lincoln, visit the home and make their selections. None but healthy children are sent out, he says, and a complete record of each is supplied.

State Board Rents More Ground

To feed and maintain the 5,000 inmates of the fifteen state institutions of Nebraska, with 800 officers and attendants, is going to require the mobilization of the best resources of the state board of control, in the face of the present high prices destined to go higher with the war with Germany on.

The board has already sent out orders to institution superintendents to use every effort to cut down expenses, dispense with luxuries, utilize every available foot of ground for garden truck and crops and retrench generally in all lines of expenditures.

The big question now with the board is to get each institution to raise as much produce as possible on its own institutional grounds.

To this end the board has rented 100 more acres of ground at the state penitentiary in addition to the 295 acres of its own. A hundred acres of wheat, killed the past winter, will be put into corn, so that the corn acreage there this fall will be 200 acres.

Will Help Conservation of Resources

Chairman E. O. Mayfield of the state board of control says that the board appreciates Governor Neville's expressed wish that every citizen make a special effort to husband resources and increase wherever possible the products from field and garden. On its part, the state board of control will see to it that every available acre of land is planted and carefully looked after, with the end in view that expenses at the various institutions may contribute as much as possible to the expense of their operation. Wherever there is land attached to one of the institutions, no matter how small the amount, gardens will be planted more extensively than in the past, if possible.

The Revised Compensation Law

The committee of the whole, with Spirk in the chair, has finished consideration of the employers' liability and workmen's compensation law. It was a substitute bill offered by the senate committee on labor. After it had been amended somewhat by Moriarty for a third reading.

Moriarty's amendment to provide that in case an injury should take place as a result of the violation of a safety law by the employer the employe could elect to take under the compensation law or sue in court for damages under the old law. This was opposed by friends of the bill as destroying the very spirit of the compensation law and would result in ambulance chasing lawyers getting employes to sue under the old common law and in many such cases the employe would lose his wages and get nothing and perhaps be permanently injured.

For Council of Defense

Without a protesting vote the house adopted the conference committee report on H. R. 423, the bill placing the Nebraska national guard under the provisions of the national defense act and raising the salaries of members of the adjutant general's staff. The measure had been amended to conform with Governor Neville's request for a state council of defense. This council will consist of eleven members, each member to draw \$5 a day during actual service.

Change District Judges.

Governor Neville signed the judicial reapportionment bill giving one additional district judge to the Fourth and Tenth districts and shifting several small counties in northwest Nebraska. Simultaneously with this announcement the governor stated that he had appointed W. M. Morning, of Lincoln, as Lancaster county's fourth judge. Mr. Morning was a presidential elector at the November election. He has practiced law here many years.